09/942913

FILE 'CAPLUS' ENTERED AT 07:24:24 ON 29 OCT 2002
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FILE COVERS 1907 - 29 Oct 2002 VOL 137 ISS 18
FILE LAST UPDATED: 27 Oct 2002 (20021027/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

```
=> s aviation
          4022 AVIATION
             1 AVIATIONS
L1        4023 AVIATION
                (AVIATION OR AVIATIONS)

=> alkylate
ALKYLATE IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> s alkylate
          3297 ALKYLATE
          1151 ALKYLATES
L2        4066 ALKYLATE
                (ALKYLATE OR ALKYLATES)

=> s (unleaded or lead?)
          1417 UNLEADED
        841018 LEAD?
L3      841792 (UNLEADED OR LEAD?)

=> s toluene
        127898 TOLUENE
          1430 TOLUENES
L4      128513 TOLUENE
                (TOLUENE OR TOLUENES)

=> s l1 and l2 and l3 and l4
L5           2 L1 AND L2 AND L3 AND L4

=> d l5 1-2 all
```

L5 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2002 ACS
AN 2002:294266 CAPLUS
DN 136:297213
TI Fuel composition for gasolines
IN Bazzani, Roberto Vittorio; Bennett, Paul James; Butler, Graham; Clark, Alisdair Quentin; Cooper, John Hardy
PA UK
SO U.S. Pat. Appl. Publ., 23 pp., Cont.-in-part of U.S. Ser. No. 721,751.
CODEN: USXXCO
DT Patent
LA English
IC ICM C10L001-16
NCL 585014000
CC 51-7 (Fossil Fuels, Derivatives, and Related Products)
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002045785	A1	20020418	US 2001-796745	20010302
	WO 9822556	A1	19980528	WO 1997-GB3084	19971111

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

PRAI	GB 1996-23934	A	19961118
	WO 1997-GB3084	W	19971111
	GB 1998-6440	A	19980326
	GB 1998-22277	A	19981014
	GB 1999-22552	A	19990923
	GB 2000-7095	A	20000323
	US 2000-721751	A2	20001127

AB An **unleaded** gasoline comprising a base blend compn. having a MON of at least 80 e.g. 80 to <98 for motor gasoline and at least 98 for **aviation** gasoline, which comprises component (a) at least 5% (by vol. of the total compn.) of at least one of triptane or 2,2,3-trimethylpentane, and component (b) at least one satd. liq. aliph. hydrocarbon having 4 to 12 carbon atoms. The corresponding **unleaded** formulated gasoline comprises also at least one motor or **aviation** gasoline additive. The blend or gasoline preferably contains at least one of isopentane, aroms. e.g. **toluene**, olefins, and oxygenates. The gasolines or blends give rise on combustion to reduced levels of emissions of exhaust gases, in particular carbon dioxide, carbon monoxide, nitrogen oxides and total hydrocarbons.
ST gasoline compn triptane trimethylpentane
IT Petroleum products
(**alkylates**; fuel compn. for gasolines)
IT Gasoline
RL: IMF (Industrial manufacture); PREP (Preparation)
(**aviation**; fuel compn. for gasolines)
IT Gasoline
RL: IMF (Industrial manufacture); PREP (Preparation)
(fuel compn. for gasolines)
IT Alkenes, uses
RL: MOA (Modifier or additive use); USES (Uses)
(fuel compn. for gasolines)
IT Aromatic hydrocarbons, uses
RL: MOA (Modifier or additive use); USES (Uses)
(fuel compn. for gasolines)
IT Naphtha

RL: MOA (Modifier or additive use); USES (Uses)
(fuel compn. for gasolines)
IT Phenols, uses
RL: MOA (Modifier or additive use); USES (Uses)
(hindered; fuel compn. for gasolines)
IT Petroleum products
(hydrocrackates and isomerates; fuel compn. for gasolines)
IT Hydrocarbons, uses
RL: MOA (Modifier or additive use); USES (Uses)
(oxy; fuel compn. for gasolines)
IT Hydrocarbons, processes
RL: REM (Removal or disposal); PROC (Process)
(unburned; fuel compn. for gasolines)
IT 64-17-5, Ethanol, uses 78-78-4, Isopentane 96-14-0, 3-Methylpentane 106-97-8, Butane, uses 107-83-5, 2-Methylpentane 108-88-3, **Toluene**, uses 110-82-7, Cyclohexane, uses 128-37-0, 4-Methyl-2,6-di-tert-butyl phenol, uses 128-39-2 464-06-2, Triptane 540-84-1, Isooctane 564-02-3, Pentane, 2,2,3-trimethyl- 1634-04-4, Methyl tertiary butyl ether 1879-09-0, 2,4 Dimethyl-6-tert. butyl phenol 29759-28-2, tert-Butyl methyl phenol 36812-13-2, -tert-Butyl Dimethylphenol 38719-68-5, Dimethylbutane
RL: MOA (Modifier or additive use); USES (Uses)
(fuel compn. for gasolines)
IT 71-43-2, Benzene, miscellaneous
RL: MSC (Miscellaneous)
(fuel compn. for gasolines)
IT 124-38-9, Carbon dioxide, processes 630-08-0, Carbon monoxide, processes 11104-93-1, Nitrogen oxide, processes
RL: REM (Removal or disposal); PROC (Process)
(fuel compn. for gasolines)

L5 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2002 ACS
AN 1948:37567 CAPLUS
DN 42:37567
OREF 42:7973h-i,7974a-b
TI Conversion of hydrocarbons
IN Russell, Robert P.; Murphree, Eger V.; Hemminger, Charles E.
PA Standard Oil Development Co.
DT Patent
LA Unavailable
CC 22 (Petroleum, Lubricants, and Asphalt)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2438456		19480323	US	

AB A process is described for the catalytic conversion of hydrocarbon oils to **aviation** base stock of low acid heat, high **aviation** octane no., and high **lead** response. A gas-oil charge stock is cracked over a fluidized SiO2.Al2O3 catalyst at 875.degree. to 1000.degree.F. to produce a large percentage of olefins. From the cracked product is sepd. a naphtha fraction b. below 400.degree.F. and contg. hydrocarbons from C6 up to those b. at 200.degree.F. The naphtha has an olefin content too high for use as **aviation** fuel. A 2nd fraction is sepd. from the cracked effluent contg. olefins and paraffins of 3 to 5 C atoms per mol. The butenes are sepd. from this latter fraction, the isobutylene is sepd. from the n-butenes by absorption in H2SO4 and the n-butene stock is subjected to an alkylation to produce satd. isoparaffins of 7 to 9 C atoms per mol. and having good antiknock qualities. The sepd. naphtha fraction is treated for olefin removal to produce an **aviation** base stock and in this treatment a C3 to C5 fraction is produced which fraction is combined with the above fraction prior to alkylation. This **alkylate** produced from the C3 to C5

olefins is combined with the olefin free naphtha stock after extn. of the latter to remove **toluene** to produce an **aviation** fuel of high antiknock value and low acid heat. Cf. C.A. 42, 4337f.

```
=> s avgas
L6          22 AVGAS

=> s l6 and l2 and l3 and l4
L7           0 L6 AND L2 AND L3 AND L4

=> d his

     (FILE 'HOME' ENTERED AT 07:23:43 ON 29 OCT 2002)

     FILE 'CAPLUS' ENTERED AT 07:24:24 ON 29 OCT 2002
L1         4023 S AVIATION
L2         4066 S ALKYLATE
L3       841792 S (UNLEADED OR LEAD?)
L4       128513 S TOLUENE
L5            2 S L1 AND L2 AND L3 AND L4
L6           22 S AVGAS
L7            0 S L6 AND L2 AND L3 AND L4

=> s l6 and l2
L8            0 L6 AND L2

=> s l6 and l4
L9            2 L6 AND L4

=> d l9 1-2 all

L9   ANSWER 1 OF 2  CAPLUS  COPYRIGHT 2002 ACS
AN   1998:352915  CAPLUS
DN   129:56326
TI   Unleaded aviation fuel composition
IN   Clark, Alisdair Quentin
PA   BP Oil International Ltd., UK; Clark, Alisdair Quentin
SO   PCT Int. Appl., 15 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
IC   ICM  C10L001-06
     ICS  C10L001-02
CC   51-7 (Fossil Fuels, Derivatives, and Related Products)
FAN.CNT 3
     PATENT NO.        KIND  DATE          APPLICATION NO.  DATE
     ---------------   ----  --------      ---------------  --------
PI   WO 9822556         A1   19980528      WO 1997-GB3084   19971111
         W:  AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE,
             DK, EE, ES, FI, GB, GE, GH, HU, ID, IS, JP, KE, KG, KP, KR, KZ,
             LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL,
             PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US,
             UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR,
             GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA,
             GN, ML, MR, NE, SN, TD, TG
     AU 9748783         A1   19980610      AU 1997-48783    19971111
     AU 715896          B2   20000210
     GB 2334262         A1   19990818      GB 1999-11462    19971111
     GB 2334262         B2   20010131
     EP 948584          A1   19991013      EP 1997-911373   19971111
```

EP 948584 B1 20010912
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI
AT 205523 E 20010915 AT 1997-911373 19971111
ES 2164333 T3 20020216 ES 1997-911373 19971111
NO 9902312 A 19990713 NO 1999-2312 19990512
US 2002045785 A1 20020418 US 2001-796745 20010302
PRAI GB 1996-23934 A 19961118
WO 1997-GB3084 W 19971111
GB 1998-6440 A 19980326
GB 1998-22277 A 19981014
GB 1999-22552 A 19990923
GB 2000-7095 A 20000323
US 2000-721751 A2 20001127
OS MARPAT 129:56326
AB Unleaded aviation fuel compns. having a Motor Octane No. of at least 98, for use in piston driven aircraft comprising triptane and at least one other satd. liq. aliph. hydrocarbon having from 5 to 10 carbon atoms. The compns. preferably contain triptane, iso-pentane and either one or any combination of iso-octane, **toluene** and Me tert-Bu ether.
ST unleaded aviation fuel; **avgas** compn
IT Fuels
(aviation fuel, unleaded; unleaded aviation fuel compn.)
IT 78-78-4, Iso-pentane 106-97-8, Butane, uses 108-88-3, **Toluene**, uses 128-37-0, 4-Methyl-2,6-bis(1,1-dimethylethyl) phenol, uses 128-39-2, 2,6-Di-tert. butyl phenol 1634-04-4, Methyl tertbutyl ether 1879-09-0, 2,4-Dimethyl-6-tert-butylphenol 26635-64-3, Iso-octane 29759-28-2, tert-Butylmethylphenol 36812-13-2, tert-Butyldimethylphenol 183329-22-8, Phenol, Tris(1,1-dimethylethyl)
RL: MOA (Modifier or additive use); USES (Uses)
(unleaded aviation fuel compn.)
IT 464-06-2, Triptane
RL: TEM (Technical or engineered material use); USES (Uses)
(unleaded aviation fuel compn.)
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Aldon Automotive Limited; GB 2106933 A 1983 CAPLUS
(2) Interaviagaz Stock Co; RU 2044032 C CAPLUS
(3) Owen, H; US 4633028 A 1986 CAPLUS

L9 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2002 ACS
AN 1953:33502 CAPLUS
DN 47:33502
OREF 47:5672b-e
TI New hydroforming unit produces petrochemicals and **AvGas**
AU Swift, J. J.; Stiles, S. R.; Howard, E. W.; Tarnpoll, M.
CS M. W. Kellogg Co., New York, NY
SO Petroleum Refiner (1953), 32(No. 2), 105-9
DT Journal
LA Unavailable
CC 22 (Petroleum, Lubricants, and Asphalt)
AB Performance, stream analyses, and operating conditions are described for the Argentine government's Planta K, constructed by the Direcci.acte.on General de Fabricaciones Militares. Planta K consists of a 2-reactor Hydroformer with distn. auxiliaries followed by a phenol extractive-distn. section. For **toluene** manuf. a narrow-boiling C7 fraction from Argentine crudes is charged to the Hydroformer. An aromatic hydrocarbon concentrate is fractionated from the Hydroformate and charged to the phenol extractor where nitration-grade **toluene** is recovered. Light naphtha from the Hydroformate is blended into motor gasoline; heavy naphtha, rich in xylenes, is sold for solvent manuf. Nitration-grade benzene is produced similarly from a C6 fraction. The yield of aromatic hydrocarbons varies with the crude source. For aviation-gasoline manuf.,

the phenol-extn. system is shut down. Light naphtha from Oficina crude is blended with recycle naphtha for Hydroformer charge. The Hydroformate is fractionated into light naphtha, base stock, and heavy-naphtha polymer. A portion of the light naphtha forms the recycle stock; the rest is blended with the base stock as required to meet volatility specifications of the aviation gasoline desired. At suitable operating conditions, aviation gasolines can be produced to meet U.S. government specifications for grades 100/130, 95/125, or 91/98. The heavy naphtha polymer is either blended into motor gasoline or sold for solvent production.

=> s l2 and l3 and l4
L10 14 L2 AND L3 AND L4

=> d l10 1-14 all

L10 ANSWER 1 OF 14 CAPLUS COPYRIGHT 2002 ACS
AN 2002:429569 CAPLUS
DN 137:8452
TI Blending operations for manufacture of reduced-oxygenate low-sulfur, low-olefin, low-sulfur winter-grade **unleaded** gasoline
IN Brundage, Scott R.; Kohler, David A.; Engle, Richard T.
PA USA
SO U.S. Pat. Appl. Publ., 13 pp., Cont. of U. S. Ser. No. 240,059, abandoned.
CODEN: USXXCO
DT Patent
LA English
IC ICM C10L001-06
NCL 585014000
CC 51-7 (Fossil Fuels, Derivatives, and Related Products)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002068842	A1	20020606	US 2001-977395	20011016
PRAI	US 1999-240059	B1	19990129		

AB An **unleaded** winter-grade gasoline that is substantially free of oxygenates, contains low contents of sulfur and benzene, and has a Reid vapor pressure of 7-15 psi is prepd. by (1) blending of gasoline component-contg. refinery streams and keeping the blend free or low in oxygenates, and (2) controlling the blending such that the product winter gasoline is in compliance with the California Predictive Model and is in compliance with the flat specification compliance option of CARB (California Air Resources Board). The gasoline is characterized by <30 wt. ppm S (preferably <5 wt. ppm), <0.1 wt.% oxygenates (preferably <0.05 wt.%), <3 wt.% olefins (preferably <2 wt.%), <0.5 wt.% benzene, Reid vapor pressure 8-13.5 psi, T50 (50% b.p.) <185.degree.F, and octane no. [(R + M)/2] 87-89 or 89-92.
ST winter gasoline petroleum blending refinery stream; oxygenate free olefin benzene poor winter gasoline blending
IT Vapor pressure
(Reid, of gasolines; blending operations for manuf. of reduced-oxygenate low-sulfur, low-olefin, low-sulfur winter-grade **unleaded** gasoline)
IT Petroleum products
(**alkylates**, blending of; blending operations for manuf. of reduced-oxygenate low-sulfur, low-olefin, low-sulfur winter-grade **unleaded** gasoline)
IT Gasoline
RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)
(blending operations for manuf. of reduced-oxygenate low-sulfur, low-olefin, low-sulfur winter-grade **unleaded** gasoline)
IT Petroleum refining

(blending; blending operations for manuf. of reduced-oxygenate low-sulfur, low-olefin, low-sulfur winter-grade **unleaded** gasoline)

IT Petroleum products
(cracking fractions, blending of; blending operations for manuf. of reduced-oxygenate low-sulfur, low-olefin, low-sulfur winter-grade **unleaded** gasoline)

IT Petroleum products
(isomerizates, blending of; blending operations for manuf. of reduced-oxygenate low-sulfur, low-olefin, low-sulfur winter-grade **unleaded** gasoline)

IT Alkenes, miscellaneous
RL: MSC (Miscellaneous)
(reduced content of; blending operations for manuf. of reduced-oxygenate low-sulfur, low-olefin, low-sulfur winter-grade **unleaded** gasoline)

IT Petroleum products
Petroleum reforming
(reformates, blending of; blending operations for manuf. of reduced-oxygenate low-sulfur, low-olefin, low-sulfur winter-grade **unleaded** gasoline)

IT 78-78-4, Isopentane 106-97-8, Butane, uses 108-88-3, **Toluene**, uses 109-66-0, Pentane, uses
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(blending of; blending operations for manuf. of reduced-oxygenate low-sulfur, low-olefin, low-sulfur winter-grade **unleaded** gasoline)

IT 71-43-2, Benzene, miscellaneous
RL: MSC (Miscellaneous)
(reduced content of; blending operations for manuf. of reduced-oxygenate low-sulfur, low-olefin, low-sulfur winter-grade **unleaded** gasoline)

L10 ANSWER 2 OF 14 CAPLUS COPYRIGHT 2002 ACS
AN 2002:294266 CAPLUS
DN 136:297213
TI Fuel composition for gasolines
IN Bazzani, Roberto Vittorio; Bennett, Paul James; Butler, Graham; Clark, Alisdair Quentin; Cooper, John Hardy
PA UK
SO U.S. Pat. Appl. Publ., 23 pp., Cont.-in-part of U.S. Ser. No. 721,751.
CODEN: USXXCO
DT Patent
LA English
IC ICM C10L001-16
NCL 585014000
CC 51-7 (Fossil Fuels, Derivatives, and Related Products)
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002045785	A1	20020418	US 2001-796745	20010302
	WO 9822556	A1	19980528	WO 1997-GB3084	19971111

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

PRAI GB 1996-23934 A 19961118
WO 1997-GB3084 W 19971111
GB 1998-6440 A 19980326
GB 1998-22277 A 19981014
GB 1999-22552 A 19990923
GB 2000-7095 A 20000323
US 2000-721751 A2 20001127

AB An **unleaded** gasoline comprising a base blend compn. having a MON of at least 80 e.g. 80 to <98 for motor gasoline and at least 98 for aviation gasoline, which comprises component (a) at least 5% (by vol. of the total compn.) of at least one of triptane or 2,2,3-trimethylpentane, and component (b) at least one satd. liq. aliph. hydrocarbon having 4 to 12 carbon atoms. The corresponding **unleaded** formulated gasoline comprises also at least one motor or aviation gasoline additive. The blend or gasoline preferably contains at least one of isopentane, aroms. e.g. **toluene**, olefins, and oxygenates. The gasolines or blends give rise on combustion to reduced levels of emissions of exhaust gases, in particular carbon dioxide, carbon monoxide, nitrogen oxides and total hydrocarbons.

ST gasoline compn triptane trimethylpentane

IT Petroleum products
(**alkylates**; fuel compn. for gasolines)

IT Gasoline
RL: IMF (Industrial manufacture); PREP (Preparation)
(aviation; fuel compn. for gasolines)

IT Gasoline
RL: IMF (Industrial manufacture); PREP (Preparation)
(fuel compn. for gasolines)

IT Alkenes, uses
RL: MOA (Modifier or additive use); USES (Uses)
(fuel compn. for gasolines)

IT Aromatic hydrocarbons, uses
RL: MOA (Modifier or additive use); USES (Uses)
(fuel compn. for gasolines)

IT Naphtha
RL: MOA (Modifier or additive use); USES (Uses)
(fuel compn. for gasolines)

IT Phenols, uses
RL: MOA (Modifier or additive use); USES (Uses)
(hindered; fuel compn. for gasolines)

IT Petroleum products
(hydrocrackates and isomerates; fuel compn. for gasolines)

IT Hydrocarbons, uses
RL: MOA (Modifier or additive use); USES (Uses)
(oxy; fuel compn. for gasolines)

IT Hydrocarbons, processes
RL: REM (Removal or disposal); PROC (Process)
(unburned; fuel compn. for gasolines)

IT 64-17-5, Ethanol, uses 78-78-4, Isopentane 96-14-0, 3-Methylpentane 106-97-8, Butane, uses 107-83-5, 2-Methylpentane 108-88-3, **Toluene**, uses 110-82-7, Cyclohexane, uses 128-37-0, 4-Methyl-2,6-di-tert-butyl phenol, uses 128-39-2 464-06-2, Triptane 540-84-1, Isooctane 564-02-3, Pentane, 2,2,3-trimethyl- 1634-04-4, Methyl tertiary butyl ether 1879-09-0, 2,4 Dimethyl-6-tert. butyl phenol 29759-28-2, tert-Butyl methyl phenol 36812-13-2, -tert-Butyl Dimethylphenol 38719-68-5, Dimethylbutane
RL: MOA (Modifier or additive use); USES (Uses)
(fuel compn. for gasolines)

IT 71-43-2, Benzene, miscellaneous
RL: MSC (Miscellaneous)
(fuel compn. for gasolines)

IT 124-38-9, Carbon dioxide, processes 630-08-0, Carbon monoxide, processes

11104-93-1, Nitrogen oxide, processes
RL: REM (Removal or disposal); PROC (Process)
(fuel compn. for gasolines)

L10 ANSWER 3 OF 14 CAPLUS COPYRIGHT 2002 ACS
AN 2001:675232 CAPLUS
DN 136:70052
TI A photochemical approach to phenylalanines and related compounds by alkylation of glycine
AU Knowles, H. S.; Hunt, K.; Parsons, A. F.
CS Department of Chemistry, University of York, Heslington, York, YO10 5DD, UK
SO Tetrahedron (2001), 57(38), 8115-8124
CODEN: TETRAB; ISSN: 0040-4020
PB Elsevier Science Ltd.
DT Journal
LA English
CC 34-2 (Amino Acids, Peptides, and Proteins)
Section cross-reference(s): 74
AB Phenylalanines can be prepd. on UV photolysis of protected glycines in the presence of di-tert-Bu peroxide, substituted **toluenes** and the photosensitizer benzophenone. These reactions, which **lead** to highly selective mono-alkylation at the .alpha.-position of glycines, involve coupling of captodative .alpha.-glycine radicals with benzyl radicals. This method can be used to selectively **alkylate** a variety of glycine derivs. using a range of substituted **toluenes** under neutral reaction conditions.
ST phenylalanine prepn photochem; glycine alkylation UV photolysis
IT Photolysis
(UV; prepn. of phenylalanines and related compds. by alkylation of glycine on UV photolysis)
IT Alkylation
Photochemistry
(prepn. of phenylalanines and related compds. by alkylation of glycine on UV photolysis)
IT Amino acids, preparation
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of phenylalanines and related compds. by alkylation of glycine on UV photolysis)
IT 101823-14-7P 258505-90-7P 383423-78-7P
RL: BYP (Byproduct); PREP (Preparation)
(prepn. of phenylalanines and related compds. by alkylation of glycine on UV photolysis)
IT 1205-08-9 1212-53-9 3027-05-2 15165-67-0 31954-27-5 101649-87-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of phenylalanines and related compds. by alkylation of glycine on UV photolysis)
IT 305819-40-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of phenylalanines and related compds. by alkylation of glycine on UV photolysis)
IT 103-29-7P, 1,2-Diphenylethane 3005-61-6P 7244-67-9P 28819-05-8P 35909-92-3P 51987-73-6P 53872-43-8P 59552-69-1P 94514-47-3P 96150-33-3P 140860-96-4P 140860-97-5P 140860-98-6P 140861-00-3P 140861-02-5P 140861-05-8P 305819-38-9P 305819-39-0P 305819-41-4P 305819-42-5P 305819-43-6P 305819-44-7P 305819-45-8P 383423-59-4P 383423-67-4P 384367-37-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of phenylalanines and related compds. by alkylation of glycine on UV photolysis)

RE.CNT 59 THERE ARE 59 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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L10 ANSWER 4 OF 14 CAPLUS COPYRIGHT 2002 ACS
AN 1996:187822 CAPLUS
DN 124:253138
TI Chronic dermal studies of petroleum streams in mice
AU Broddle, William D.; Dennis, Michael W.; Kitchen, Donald N.; Vernot, Edmond H.
CS Conoco, Inc., Houston, TX, 77079, USA
SO Fundamental and Applied Toxicology (1996), 30(1), 47-54
CODEN: FAATDF; ISSN: 0272-0590
PB Academic
DT Journal
LA English
CC 4-6 (Toxicology)
Section cross-reference(s): 51
AB During petroleum refining, a large no. of products are generated which have varying chem. and phys. properties. These are known in the industry as petroleum streams. To characterize their carcinogenic activity, a no. of these com. produced streams were administered to C3H/HeJ mice in chronic dermal bioassays. The bioassays were conducted using one of two study designs: the first set of test materials was applied for a lifetime and the second set for 24 mo. In the lifetime study, the last mice in the test groups survived for periods of 31 to 32 mo. Middle distillates, boiling in the range 115-390.degree., were found to decrease the lifespan of exposed mice compared to controls or streams of higher and lower boiling ranges. These middle distillate streams included straight run kerosine, hydrodesulfurized middle distillate, straight run kerosine, hydrodesulfurized middle distillate, straight run middle distillate, light catalytic cracked distillate, and 90/10% and 70/30% mixts. of the last two. The middle distillate streams also provided to be active as carcinogens, with tumor incidence ranging from 16 to 67%. Light **alkylate** naphtha, heavy catalytic reformed naphtha, vacuum residuum, and **unleaded** gasoline did not demonstrate significant carcinogenic potency. Heavy thermal cracked naphtha, heavy catalytic cracked naphtha, and hydrotreated light naphthenic distillate were dermal carcinogens of low potency in this study. Administration of light catalytic cracked naphtha led to a low incidence of very late developing tumors with a mean latency of 118 wk. Application of the 0.1% soln. of catalytic cracked clarified oil in **toluene** did not result in a significant incidence of tumors, but the 10% soln. caused almost 100% mortality and 100% tumor incidence in 12 mo. There was no correlation between carcinogenic potency and the indexes of irritation, alopecia, erythema, and scabbing. Only two of the streams tested, hydrotreated light naphthenic distillate and 10% catalytic cracked clarified oil, contain polynuclear arom. hydrocarbons (PNAs) and may be presumed to be complete carcinogens. The middle distillates and heavy naphthas are nonmutagenic and essentially free of PNAs. Their activity may result from promotion of already-initiated skin sites. Where comparisons could be made, reducing the exposure period from a lifetime (29-32 mo) to 24 mo did not change the evaluations of stream carcinogenicity except in the case of light catalytic cracked naphtha were six of the seven mice that developed tumors did so after 24 mo.
ST skin petroleum middle distillate carcinogenicity
IT Carcinogens
Skin
(chronic dermal studies of petroleum streams)
IT Naphtha
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(products; chronic dermal studies of petroleum streams)
IT Naphtha
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(cracked, chronic dermal studies of petroleum streams)
IT Gasoline

RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(**lead**-free, chronic dermal studies of petroleum streams)
IT Petroleum products
(middle distillates, chronic dermal studies of petroleum streams)
IT Petroleum products
(naphthenic fractions, chronic dermal studies of petroleum streams)
IT Aromatic hydrocarbons, biological studies
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(polycyclic, chronic dermal studies of petroleum streams)

L10 ANSWER 5 OF 14 CAPLUS COPYRIGHT 2002 ACS
AN 1994:683405 CAPLUS
DN 121:283405
TI Acid catalyst and use thereof in alkylation of olefins with tertiary alkanes
IN King, David L.; Cooper, Michael D.; Sanderson, William A.
PA Catalytica, Inc., USA
SO PCT Int. Appl., 52 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C07C
CC 51-7 (Fossil Fuels, Derivatives, and Related Products)
Section cross-reference(s): 45, 67
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9410106	A2	19940511	WO 1993-US10463	19931029
	W: CA, JP				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 5414187	A	19950509	US 1992-968998	19921030
PRAI	US 1992-968998		19921030		

OS MARPAT 121:283405
AB The present invention provides an acid catalyst complex comprising an organosulfonic acid having at least one covalent carbon-fluorine bond or one covalent carbon-phosphorus bond provided by a phosphono radical which has been contacted with a Lewis acid to produce a catalyst complex contg. the Lewis acid. The present invention also provides a process for the conversion of a reactant into a reaction product in the presence of the catalyst complex. In particular, the catalyst complex is useful for providing a high octane **alkylate** stream by converting a mixt. comprising isoparaffins and olefins into the **alkylate** in the presence of the catalyst complex.
ST acid catalyst alkylation olefin tertiary alkane
IT Gasoline
RL: IMF (Industrial manufacture); PREP (Preparation)
(Lewis acid complex catalysts for alkylation of butenes with isoalkanes in manuf. of)
IT Petroleum refining catalysts
(alkylation, fluorinated phosphonosulfonic Lewis acid complexes for manuf. of gasoline blends)
IT 107-01-7, 2-Butene 624-64-6, trans-2-Butene
RL: RCT (Reactant); RACT (Reactant or reagent)
(Lewis acid complex catalysts for alkylation of)
IT 75-28-5, Isobutane
RL: RCT (Reactant); RACT (Reactant or reagent)
(Lewis acid complex catalysts for alkylation of butenes with)
IT 7439-88-5D, Iridium, fluorinated phosphonosulfonic acid complexes
7439-92-1D, **Lead**, fluorinated phosphonosulfonic acid complexes
7439-96-5D, Manganese, fluorinated phosphonosulfonic acid complexes
7440-03-1D, Niobium, fluorinated phosphonosulfonic acid complexes
7440-04-2D, Osmium, fluorinated phosphonosulfonic acid complexes

7440-07-5D, Plutonium, fluorinated phosphonosulfonic acid complexes
7440-10-0D, Praseodymium, fluorinated phosphonosulfonic acid complexes
7440-18-8D, Ruthenium, fluorinated phosphonosulfonic acid complexes
7440-21-3D, Silicon, fluorinated phosphonosulfonic acid complexes
7440-29-1D, Thorium, fluorinated phosphonosulfonic acid complexes
7440-31-5D, Tin, fluorinated phosphonosulfonic acid complexes
7440-32-6D, Titanium, fluorinated phosphonosulfonic acid complexes
7440-33-7D, Tungsten, fluorinated phosphonosulfonic acid complexes
7440-45-1D, Cerium, fluorinated phosphonosulfonic acid complexes
7440-58-6D, Hafnium, fluorinated phosphonosulfonic acid complexes
7440-61-1D, Uranium, fluorinated phosphonosulfonic acid complexes
7440-62-2D, Vanadium, fluorinated phosphonosulfonic acid complexes
7440-67-7D, Zirconium, fluorinated phosphonosulfonic acid complexes
7446-70-0D, Aluminum trichloride, complexes 7550-45-0D, Titanium tetrachloride, complexes 7637-07-2D, Boron trifluoride, complexes 7647-19-0D, complexes 7705-07-9D, Titanium trichloride, complexes 7705-08-0D, Iron trichloride, complexes 7727-15-3D, Aluminum tribromide, complexes 7783-70-2D, Antimony pentafluoride, complexes 7789-68-6D, Titanium tetrabromide, complexes 10026-11-6D, Zirconium tetrachloride, complexes 10028-14-5D, Nobelium, fluorinated phosphonosulfonic acid complexes 10031-26-2D, Iron tribromide, complexes 10294-33-4D, Boron tribromide, complexes 10294-34-5D, Boron trichloride, complexes 13494-80-9D, Tellurium, fluorinated phosphonosulfonic acid complexes 13517-10-7D, Boron triiodide, complexes 130463-68-2
RL: CAT (Catalyst use); USES (Uses)
(acid catalysts for alkylation of olefins with tertiary alkanes)

IT 60-29-7P, Diethyl ether, preparation 115-10-6P, Dimethyl ether
RL: IMF (Industrial manufacture); PREP (Preparation)
(fluorinated phosphonosulfonic acid-Lewis acid complexes catalysts for etherification of alcs.)

IT 106-98-9, 1-Butene, reactions 111-66-0, 1-Octene 27215-95-8, Nonene
RL: RCT (Reactant); RACT (Reactant or reagent)
(fluorinated phosphonosulfonic acid-Lewis acid complexes catalysts for isomerization of)

IT 50-99-7P, Glucose, preparation 57-48-7P, Fructose, preparation 62-53-3P, Aniline, preparation 67-64-1P, Acetone, preparation 79-21-0P, Peracetic acid 108-95-2P, Phenol, preparation
RL: IMF (Industrial manufacture); PREP (Preparation)
(fluorinated phosphonosulfonic acid-Lewis acid complexes catalysts for manuf. of)

IT 64-17-5, Ethanol, reactions 67-56-1, Methanol, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(fluorinated phosphonosulfonic acid-Lewis acid complexes catalysts for manuf. of ethers from)

IT 75-21-8, Ethylene oxide, reactions 75-56-9, Propylene oxide, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(fluorinated phosphonosulfonic acid-Lewis acid complexes catalysts for manuf. of glycols from)

IT 108-88-3, **Toluene**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(fluorinated phosphonosulfonic acid-Lewis acid complexes catalysts for manuf. of nitroaroms. from)

IT 98-82-8P, Cumene
RL: IMF (Industrial manufacture); PREP (Preparation)
(fluorinated phosphonosulfonic acid-Lewis acid complexes catalysts for reaction of)

IT 50-00-0, Formaldehyde, reactions 57-50-1, Sucrose, reactions 64-19-7, Acetic acid, reactions 71-43-2, Benzene, reactions 79-41-4, Methacrylic acid, reactions 80-15-9, Cumene hydroperoxide 115-07-1, Propylene, reactions 115-11-7, Isobutylene, reactions 7722-84-1, Hydrogen peroxide, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)

(fluorinated phosphonosulfonic acid-Lewis acid complexes catalysts for reaction of)

L10 ANSWER 6 OF 14 CAPLUS COPYRIGHT 2002 ACS
AN 1993:191095 CAPLUS
DN 118:191095
TI Interaction of acetone with ammonia and alcohols over a HZSM-5 zeolite. Part 1. Methanol
AU Novakova, J.; Bosacek, V.; Dolejsek, Z.; Kubelkova, L.
CS J. Heyrovsky Inst. Phys. Chem. Electrochem., Czech. Acad. Sci., Prague, 182 23, Czech.
SO Journal of Molecular Catalysis (1993), 78(1), 43-55
CODEN: JMCADS; ISSN: 0304-5102
DT Journal
LA English
CC 22-13 (Physical Organic Chemistry)
AB Temp.-programmed desorption accompanied by conversion (TPDC) of preadsorbed acetone was studied on a HZSM-5 zeolite with Si/Al = 13.5. The reactivity of surface species created from acetone with methanol, ammonia and mixts. of these was investigated by analyzing the compn. of the products released (using a mass spectrometer) and the compn. of the surface species (using a 13C MAS NMR spectrometer). Ammonia reacts with the carbonyl group of acetone surface species to give imino carbocations in both the absence and presence of methanol, and methanol **alkylates** the acetone surface species whether ammonia is present or absent. The decompn. of the species created from acetone, methanol and ammonia **leads** to different products than the decompn. of the species formed on the zeolite either from acetone (or methanol) alone or from acetone (or methanol) and ammonia. The strong dehydrogenation function of HZSM-5 resulted in the release of acetonitrile and HCN from acetone and methanol, resp. (in the presence of ammonia), while pyridinium bases (in the presence of all 3 reactants) appeared only in trace amts.
ST acetone reaction ammonia alc zeolite; methanol reaction acetone ammonia zeolite
IT Catalysts and Catalysis
(HZSM-5 zeolites, for acetone with ammonia and methanol)
IT Aromatic compounds
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, by reactions of mixts. of acetone, ammonia, and methanol)
IT Reaction mechanism
(of acetone with ammonia or methanol or their mixt., on HZSM-5 zeolites)
IT Zeolites, uses
RL: CAT (Catalyst use); USES (Uses)
(HZSM 5, catalyst, for reactions of acetone with ammonia or methanol or their mixt.)
IT 74-90-8P, Hydrogen cyanide, preparation
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, by reaction of acetone, methanol, and ammonia on HZSM-5 zeolites)
IT 75-05-8P, Acetonitrile, preparation 106-99-0P, Butadiene, preparation 108-88-3P, **Toluene**, preparation 110-71-4P, 1,2-Dimethoxyethane 115-07-1P, Propene, preparation 115-11-7P, Isobutene, preparation 124-38-9P, Carbon dioxide, preparation 463-49-0P, Allene 1330-20-7P, Dimethylbenzene, preparation 25551-13-7P, Trimethylbenzene
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, by reactions of mixts. of acetone, ammonia, and methanol)
IT 67-56-1, Methanol, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with acetone in presence or absence of ammonia on HZSM-5

zeolite)
IT 7664-41-7, Ammonia, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with acetone in presence or absence of methanol on HZSM-5 zeolite)
IT 67-64-1, Acetone, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with ammonia or methanol or their mixt. on HZSM-5 zeolite)
IT 16969-45-2, Pyridinium
RL: PROC (Process)
(trace formation of, in reaction of acetone with ammonia and methanol on HZSM-5 zeolite)

L10 ANSWER 7 OF 14 CAPLUS COPYRIGHT 2002 ACS
AN 1989:537165 CAPLUS
DN 111:137165
TI Transition to the manufacture of **unleaded** automobile gasoline
AU Nazarov, V. I.; Emel'yanov, V. E.; Naftulin, I. S.; Nemets, L. L.
CS VNIINP, USSR
SO Neftepererabotka i Neftekhimiya (Moscow, Russian Federation) (1989), (7), 3-5
CODEN: NNNSAF; ISSN: 0028-1190
DT Journal
LA Russian
CC 51-7 (Fossil Fuels, Derivatives, and Related Products)
AB The use of antiknock gasoline additives (e.g., isopentane, PhMe, MeOH, sec-BuOH, **alkylates**, and catalytic reforming and catalytic cracking fractions) is discussed in terms of elimination of the use of Et4Pb in USSR. Manuf. of high-octane Pb-free components can better be attained by carrying out catalytic reforming and catalytic cracking reactions under more severe conditions rather than by construction of new plants. MeOH is the cheapest and most effective octane improver for gasoline with octane no. 93, but its use depends on pos. results of ongoing research.
ST gasoline antiknock additive USSR; methanol **toluene** octane improver USSR; MTBE isopentane octane improver USSR; butyl alc octane improver USSR; **unleaded** gasoline octane improver
IT Petroleum products
(**alkylates**, high octane no. component, for **unleaded** gasoline, in USSR)
IT Gasoline additives
(antiknock, demand for, for **unleaded** gasoline manuf., in USSR)
IT Gasoline
RL: USES (Uses)
(cracker, high octane no. component, for **unleaded** gasoline, in USSR)
IT Gasoline
RL: USES (Uses)
(**lead**-free, manuf. of, phase-in of **lead**-free blending components in, of USSR)
IT Gasoline
RL: USES (Uses)
(reformer, high octane no. component, for **unleaded** gasoline, in USSR)
IT 67-56-1, Methanol, uses and miscellaneous 78-78-4, Isopentane 78-92-2, sec-Butyl alcohol 108-88-3, **Toluene**, uses and miscellaneous 1634-04-4, MTBE
RL: USES (Uses)
(octane improver, for **unleaded** gasoline, in USSR)

L10 ANSWER 8 OF 14 CAPLUS COPYRIGHT 2002 ACS
AN 1989:426138 CAPLUS
DN 111:26138
TI Liquid fuels of high octane values containing **toluene**, **alkylate** and other components
IN Jessup, Peter J.
PA Union Oil Co. of California, USA
SO U.S., 8 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM C10L001-18
ICS C10L001-06
NCL 044077000
CC 51-7 (Fossil Fuels, Derivatives, and Related Products)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 4812146	A	19890314	US 1988-204624	19880609

AB A fuel compn. has an octane rating of .gtorsim.100 and is composed of PhMe, **alkylate** and .gtoreq.2 further components selected from isopentane, n-butane, and MTBE. A preferred fuel compn. contains butane 5.0, PhMe 52.6, isopentane 3.4, **alkylate** 29.0, and MTBE 10.0 vol.%, having octane value 100.7 (predicted octane value 100.5 by a specific equation) and meeting all the requirements of ASTM D439 class A and B **unleaded** gasoline.
ST gasoline **toluene** butane isopentane MTBE; **unleaded** gasoline **toluene alkylate** MTBE
IT Alkanes, uses and miscellaneous
RL: MOA (Modifier or additive use); USES (Uses)
(branched, **alkylate** contg., **unleaded** gasoline contg., high-octane)
IT Gasoline
RL: TEM (Technical or engineered material use); USES (Uses)
(**lead**-free, high-antiknock, contg. **toluene**-**alkylate**-butane-isopentane-MTBE)
IT 540-84-1, Isooctane
RL: MOA (Modifier or additive use); USES (Uses)
(**alkylate** contg., **unleaded** gasoline contg., high-octane)
IT 75-28-5, Isobutane 78-78-4, Isopentane 106-97-8, n-Butane, uses and miscellaneous 108-88-3, uses and miscellaneous 115-11-7, Isobutylene, uses and miscellaneous 1634-04-4, MTBE
RL: MOA (Modifier or additive use); USES (Uses)
(**unleaded** gasoline contg., high-octane)

L10 ANSWER 9 OF 14 CAPLUS COPYRIGHT 2002 ACS
AN 1988:437768 CAPLUS
DN 109:37768
TI Amino ketone and oxazole synthesis. X. Acylation and alkylation of arenes with the azlactone of cinnamoylglycine
AU Balaban, Michaela-Carmen; Schiketanz, Iosif; Balaban, Alexandru T.; Schiketanz, Ana; Gheorghiu, Mircea D.
CS Dep. Org. Chem., Polytech. Inst., Bucharest, 76206, Rom.
SO Revue Roumaine de Chimie (1987), 32(9-10), 975-8
CODEN: RRCHAX; ISSN: 0035-3930
DT Journal
LA English
CC 28-6 (Heterocyclic Compounds (More Than One Hetero Atom))
OS CASREACT 109:37768
GI